



CITY OF NEWARK
DELAWARE

BIDDER _____

BID SECURITY _____

CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

NOTICE

Do not disassemble. Return intact with properly completed forms or bid may be rejected.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

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CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

NOTICE OF LETTING

Sealed bids for Contract No. 18-03, Purchase of One 35KV Outdoor Vacuum Substation Circuit Breaker, will be received in the Purchasing Office, Newark Municipal Building, 220 South Main Street, Newark, Delaware, 19711, Newark, Delaware until 2 p.m., prevailing time, Tuesday, June 5, 2018 and will be publicly opened and read aloud in the Council Chamber shortly thereafter.

Copies of the contract documents may be obtained by each prospective bidder on the City's website at www.newarkde.gov/bids.aspx.

CITY OF NEWARK
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CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

GENERAL PROVISIONS

1. BIDS

Each bid shall be submitted on the proposal form included herein. The proposal and all other required documents must be submitted in a sealed envelope clearly identified with the bidder's name and marked, "City of Newark - Contract No. 18-03, Purchase of One 35KV Outdoor Vacuum Substation Circuit Breaker, and will be received in the Purchasing Office, 220 South Main Street, Newark, Delaware, 19711 until 2 p.m., prevailing time, Tuesday, June 5, 2018. Each bid so submitted shall constitute an irrevocable offer for a period of sixty (60) days following the bid opening date.

2. TAXES

The bid price shall not include federal or state taxes. If applicable, the bidder shall furnish the City with the necessary tax exemption forms in triplicate upon submission of his invoice.

3. BID SECURITY

No bid will be considered unless accompanied by a certified check, cashier's check or bid bond in the amount of five percent (5%) of the bid. If a bid bond is submitted, it must be made out on the attached "Bond to Accompany Proposal" form. The successful bidder, upon his failure or refusal to execute and deliver the contract within ten (10) days after he has received notice of acceptance of his bid, shall forfeit to the City for such failure or refusal, the security deposit with his bid.

4. AWARDS

Following review of all bids by the City Manager and her recommendation to the Mayor and Council, awards, if any, will be made to the lowest responsible bidder. The Mayor and Council reserve the right to reject any or all bids and to waive minor irregularities and defects in form where the best interests of the City would be served. The City reserves the right to divide the award of the contract into each of the parts designated in the specifications and proposal.

5. CONTRACT SURETY BOND

A contract surety bond satisfactory to the City of Newark and in the full amount of the contract may be required by the successful bidder within ten (10) days of the contract award date. Upon receipt of this surety bond, the City will return any certified or cashier's check submitted as bid security.

6. DELIVERY

Delivery shall be F.O.B. City of Newark Warehouse, Phillips Avenue, Newark, Delaware. The successful bidder shall include the type and serial number of all equipment on invoices and packing slips.

7. INSPECTIONS

All equipment shall be subject to final inspection. If, in any way, an item fails to meet the terms of the contract, it may be rejected or liquidated damages charges made. The decision of the City will be final and any rejected items or material will have to be replaced at the expense of the bidder.

8. INTENT OF SPECIFICATIONS

It shall be the bidder's responsibility to furnish the equipment specifically indicated in these specifications and such other as may be required.

9. REGULATIONS AND EXCEPTIONS

Any and all exceptions which are taken to the specifications shall be noted on the Proposal form. The listing of an exception may be grounds for rejection. All equipment must meet all applicable federal or state regulations.

10. STANDARDS AND MANUFACTURER'S WARRANTY

All equipment will be unused in all component parts and will be the latest current production including all accessories. The specifications will be construed as the minimum required. When the manufacturer's standards exceed these, the standard units will be furnished. All material will be free of defects. Manufacturer's standard warranties shall apply.

11. WORKMANSHIP

Workmanship shall conform to the best current manufacturing practice followed for equipment of the type. Component parts and

units will be manufactured to definite standard dimensions, with proper fits and clearances.

12. ADVERTISEMENT

It is further agreed that any bidder submitting a bid will not use the name of the City in any advertisement without first obtaining the written consent of the City Manager.

13. EEO AND LICENSING

The bidder shall possess all business and other licenses required by the State of Delaware and also be a fair and equal opportunity employer.

14. NON COLLUSION

The vendor shall not, either directly or indirectly, enter into any agreement, participate in any collusion, or otherwise take any action in restraint of free competitive bidding in connection with the contract.

15. INQUIRIES AND ADDENDA

Any inquiries regarding the bidding process shall be directed to Mr. Mark Brainard, Assistant to the Managers, at 302-366-7000. Any questions regarding the specifications shall be directed to Mr. Bhadresh Patel, Director of the Electric Department at 302-366-7000 x 2085. Any changes to the contract documents shall be made only by numbered addendum(a) issued not later than four (4) days prior to the date set for bid opening. Prospective bidders shall bear the entire responsibility for being sure they have received any and all such addenda.

16. DAMAGES FOR LATE DELIVERY

The dates for delivery of the equipment are important and may influence the award of the contract. Submitted delivery dates shall be calculated from the date of notification of award. Liquidated damages of \$25.00 per calendar day may be assessed by the City, at its discretion, for every day that delivery is extended beyond the submitted delivery date.

17. PAYMENT

Payment shall be made within thirty (30) days from receipt of the equipment, subject to final inspection and acceptance of the items by the City.

18. TERMINATION OF AGREEMENT

This agreement may be terminated by the City upon thirty (30) days written notice if the contractor fails to perform satisfactorily in accordance with the terms and conditions of the contract. In the event this agreement is terminated, the contractor shall be paid for services satisfactorily rendered up to the termination date.

19. INDEMNIFICATION & OWNERSHIP OF MATERIAL

The contractor shall solely be responsible and liable for the accuracy and completeness of all work performed and shall agree to indemnify, defend and hold harmless the City of Newark, its officers, agents and employees, from and against any and all claims, actions, suits and proceedings arising out of, based upon or caused by negligent acts, omissions or errors of or the infringement of any copyright of patent, by the contractor, its officers, agents, employees or subcontractors, in the performance of the contracted agreement.

All documents prepared and submitted pursuant to this RFP or contract shall be the property of the City upon submittal and will be subject to staff and public review and discussion in association with our public bidding and formal proposal process. Any information or documents deemed proprietary shall be so marked at time of submittal and limited to detail where the disclosure of contents could be prejudicial to competing offerors during the process of negotiation, and any commercial or financial information of a privileged or confidential nature.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

SPECIFICATIONS

PURCHASE OF ONE 35KV OUTDOOR VACUUM
SUBSTATION CIRCUIT BREAKER

PART 1 - GENERAL

1.1 SCOPE

- A. This specification defines the technical requirements for outdoor substation circuit breakers with rated maximum voltage of 38kV. This specification covers design, manufacture and factory production testing.

1.2 SUBMITTALS

- A. Submit shop drawings and product information in the quantities listed according to the conditions of the contract. All transmittals shall be identified by purchaser name, purchaser location and purchaser's order number.
- B. Approval documents shall include two (2) sets of the following (if applicable):
1. Schematic diagram
 2. Connection diagram
 3. Breaker parts list
 4. Current transformer and accessories list
 5. Breaker outline drawing
 6. Terminal connector outline drawing
 7. Bushing current excitation curve drawing
- C. Drawings shall be returned to manufacturer within two weeks. Drawings shall be marked as follows:

1. Reviewed - indicates drawings have been examined and appear to be in conformance with specifications.
 2. Resubmit - indicates the drawings are not in conformance with the specifications. Changes that need to be made will be noted on drawings.
- D. Final (certified) documents shall be provided in AutoCAD format and shall include four (4) sets of the following:
1. Documents listed in 1.2 B above
 2. Instruction manuals
- E. Product data: Include features, characteristics and ratings of the circuit breakers and other components.
- F. Shop drawings: Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components and location and size of each field connection. Include the following:
1. Nameplate legends
 2. Size and number of conductors in each phase
 3. Current ratings of bus
 4. Short-time and short-circuit ratings of the circuit breaker
 5. Detailed wiring diagrams showing wiring for power, signal and control systems including differentiation between manufacturers installed and field installed wiring.
- G. Instruction manuals: Manufacturers standard instruction manuals shall be provided. Instruction manuals shall contain general description, installation and connection instructions, installation checks and test instructions and maintenance information required for the circuit breakers. An instruction manual shall also be inside each unit when shipped.

- H. All approval drawings and final drawings shall be submitted as follows:

CITY OF NEWARK, ELECTRIC DEPARTMENT
220 SOUTH MAIN STREET
NEWARK, DELAWARE 19711
ATTN: MR. BHADRESH PATEL, DIRECTOR

1.3 QUALITY ASSURANCE

- A. Manufacturer qualifications: Engage a firm with at least 20 years' experience in manufacturing outdoor vacuum substation circuit breakers. The manufacturer of the outdoor enclosure shall also be the manufacturer of the circuit breaker operating mechanism.
- B. Comply with requirements of latest revisions of applicable industry standards, specifically including the following:
1. Outdoor vacuum substation circuit breakers
 - a. ANSI/IEEE C37.04-1999 - Standard rating structure for AC high-voltage circuit breakers.
 - b. ANSI/IEEE C37.06-2009 - Preferred ratings and related required capabilities for AC high-voltage circuit breakers.
 - c. ANSI/IEEE C37.010-1999 - Application guide for AC high-voltage circuit breakers.
 - d. ANSI/IEEE C57.13-2008 - Standard requirements for instrument transformers.
 - e. NEMA SG-4-2009 - AC high-voltage circuit breakers.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver each circuit breaker fully assembled, except that the mounting legs may be removed to minimize shipping height. The circuit breaker shall be delivered to the City of Newark Central Stores Warehouse, 406 Phillips Avenue, Newark, Delaware 19711.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. **The outdoor vacuum substation circuit breaker shall be manufactured by the following:**

1. SIEMENS

2. ABB

2.2 RATINGS

A. The substation circuit breakers shall be three-pole, 60 Hz, outdoor, free-standing, using one vacuum interrupter per pole.

B. Electrical Ratings:

Rated maximum voltage (kV RMS)	38 kV RMS
Operating Voltage	34.5 kV
Voltage range factor K	1.0
Continuous Current	1200 Amps
Short Circuit Current	20kA
Power Frequency	60 Hz
Full Wave Impulse withstand (BIL)	200 kV
Operating Duty Cycle	0-0.3s-CO-15s-CO
Percent DC Component	48
Minimum Reclosing Time	0.3 Seconds
Short-Time Current Duration	3 Seconds
Rated interrupting time	5 cycles (83 ms)
General Purpose Line Charging	5 Amps
General Purpose Isolated Bank Sw.	250 Amps
Definite Purpose Line Charging	100 Amps
Back-to-Back switching	250 Amps
Inrush Peak	10kA
Inrush Frequency	4240 Hz

C. Breaker Operating Mechanism:

Spring Charge Motor Voltage	120 Volts AC
Spring release Close coil	48 volts DC
Trip Coil	48 Volts DC
	120 Volts AC

2.3 GENERAL REQUIREMENTS

- A. Operating mechanism: magnetically actuated
- B. Control voltage: The circuit breaker control power shall be:
 - 1. Trip circuit: **48 Vdc**
 - 2. Close circuit: **48 Vdc**
- C. Operation counter: The circuit breaker shall be equipped with an operation counter to count close operations.
- D. Emergency trip: There shall be an externally operable emergency (69) trip mechanism equipped with an automatic lockout switch to prevent electrical reclosing. The emergency trip device shall be colored red and prominently located on the outside of the circuit breaker.
- E. Grounding: The circuit breaker shall have two stainless steel ground pads located at diagonally opposite bottom corners of the cabinet. Ground pads located on support legs rather than on the cabinet are not acceptable.
- F. Heaters: The circuit breaker shall be equipped with thermostatically controlled space heaters in the low-voltage and high-voltage compartments, 240 volt.
- G. Paint finish: The circuit breaker finish color shall be ANSI 70 gray. The paint system shall provide a durable finish, which is highly resistant to fading. It shall be applied at a minimum of two mils dry film thickness to both the internal cabinet and external surfaces.
- H. Bushings: The bushing electrical ratings shall be equal to or greater than those of the circuit breaker. The color of bushings shall be ANSI light gray. The external terminals shall be threaded stud type copper. Bushing terminals shall be tin plated at both ends. Bushings shall be porcelain.

- I. Current transformers (CT's): The circuit breaker shall be equipped with multi-ratio, bushing type CT's suitable for relaying and metering. The secondary current rating shall be 5 A. All secondary leads shall be wired to short-circuiting type terminal blocks in the operator compartment. The ratio of CT's and the required relay accuracy class shall be as follows: **1200:5 C400**. The circuit breaker shall be furnished with **4** CT's per phase.
- J. Auxiliary switch: The circuit breaker shall have six "a" and six "b" contacts available for purchaser's use.
- K. Provide one protective relay and associated test switch. Protective relay shall be mounted on a hinged panel, completely factory assembled, wired and tested before delivery. Relay shall be a Schweitzer Engineering Laboratories **(SEL) SEL-787 Transformer Protection Relay model number 0787EX2C1C0X75850430** no exceptions. Test switch shall be FT-1 or equal.
- L. Provide red and green LED indicating lights all wired properly for control of the circuit breaker.
- M. Provide one interior GFCI convenience outlet and one light with switch, 120 volt.
- N. Provide molded case circuit breakers in lieu of fused knife switches.
- O. Wire markers shall be provided.
- P. Provide six (6) bushing/terminal/stud connectors tin plated bronze to NEMA 4 hole pad sized to fit circuit breaker bushing stud.

2.4 ACCESSORIES

- A. Provide accessories as needed for operation of the circuit breaker.
- B. Provide accessories rack to mount communication equipment.

PART 3 - EXECUTION

3.1 TESTING

- A. The outdoor vacuum substation circuit breakers furnished under this specification shall be fully tested and documented by certified production test reports in accordance with IEEE C37.09-1999.
- B. As a minimum, the following production tests shall be conducted for the medium-voltage outdoor vacuum substation circuit breakers in accordance with IEEE C37.09-1999.
 - 1. Resistors, heaters and coil check tests
 - 2. Control and secondary wiring check tests
 - 3. Mechanical operation tests
 - 4. Timing tests
 - 5. Stored energy system tests
 - 6. Conductivity of current path test
 - 7. Power frequency withstand voltage tests on primary insulation components
 - 8. Power frequency withstand voltage tests on control, secondary wiring and components to include motor, release coils, etc.
 - 9. Nameplate check
 - 10. Vacuum integrity test

3.2 WARRANTY

- A. Equipment manufacturer shall warrant that all goods supplied are free of non-conformities in workmanship and materials for one year from date of initial operation, but no more than eighteen months from date of shipment.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

PROPOSAL

TO: The Mayor and City Council
 Newark, Delaware

FROM: _____

The undersigned as a lawfully authorized agent for the below named Bidder has carefully examined the General Provisions, Special Provisions, Technical Specifications, and Proposal to be known as Contract No. 18-03 and binds himself upon award to him by the Mayor and City Council of Newark, Delaware to execute in accordance with such award, a contract of which contract this Proposal and said General Provisions and any Addenda shall be a part, and to furnish the equipment as specified F.O.B. Newark, Delaware in a manner that is in complete accordance with said General Provisions, Special Provisions, and Technical Specifications, at the following named prices for the items:

		BID PROPOSAL OF CONTRACT NO. 18-03				
		COMPANY _____				
ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE	FREIGHT CHARGES	DELIVERY ARO
1	1	OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER				

COMPANY _____

Exceptions: _____

DATE: _____ Bidder/Contractor: _____

BY: _____
Its legally authorized representative

TITLE: _____

STREET ADDRESS: _____

CITY, STATE, ZIP: _____

CITY OF NEWARK
Delaware

CONTRACT NO. 18-03

PURCHASE OF ONE 35KV OUTDOOR VACUUM SUBSTATION CIRCUIT BREAKER

BOND TO ACCOMPANY PROPOSAL

(not necessary if certified or cashier's check is used)

KNOW ALL MEN BY THESE PRESENTS THAT _____ of
_____ of the County of _____ and
State of _____, principal, and
_____ of _____ as
surety, legally authorized to do business in the State of
Delaware, are held and firmly bound unto the City of Newark in the
sum of _____ Dollars, to be paid to
said City of Newark for use and benefit of the Mayor and Council
of Newark, for which payment well and truly to be made, we do bind
ourselves, our and each of our heirs, executors, administrators
and successors, jointly and severally, for and in the whole,
firmly by these presents. Sealed with our seal dated the
_____ day of _____ in the year of our Lord, two
thousand and eighteen (2018).

NOW THE CONDITIONS OF THIS OBLIGATIONS IS SUCH, that if the
above bounded principal who has submitted to said City of Newark,
a certain proposal to enter into a certain Contract No. 18-03,
Purchase of One 35KV Outdoor Vacuum Substation Circuit Breaker,
and if said shall well and truly enter into and executes

said contract and furnish therewith such Surety Bond or Bonds as may be required by the terms of said contract and approved by said City of Newark, said Contract, and said Bond to be entered into within ten (10) days after the date of official notice of award thereof in accordance with the terms of said proposal, then this obligation to be void, otherwise shall remain in full force and virtue.

SIGNED AND SEALED IN THE
PRESENCE OF WITNESS:

SIGNED _____ (SEAL)

BY _____ (SEAL)

SIGNED _____ (SEAL)

BY _____ (SEAL)